ISSN 1188-4169

Canada Communicable Disease Report

FAX

Vol . 21-5

Date of publication: 15 March 1995

Contained in this FAX issue: *(No. of pages: 7)*

MEDIA ATTITUDES TOWARD IMMUNIZATION	F-1	37 – 40
RESURGENCE OF PERTUSSIS IN MONTÉRÉGIE, QUEBEC — 1990-1994	F-3	40 – 44
PERTUSSIS IN QUEBEC: ONGOING EPIDEMIC SINCE THE LATE 1980s	F-5	45 – 48
ANNOUNCEMENTS	F-7	48

Official page numbers: For reference purposes, citing should refer to the page numbers of the printed copy and not to those of the FAX copy (F-#).

MEDIA ATTITUDES TOWARD IMMUNIZATION

Introduction

It is generally accepted by most health care providers that children in Canada are under-vaccinated, and that more needs to be done to make parents and caregivers aware of the importance of providing early protection through full immunization.

Historically, there have been five sources for information about the need for immunization: family physicians and other health professionals, public health units, government health bodies, voluntary health agencies and pharmaceutical companies. When these bodies have had the opportunity to present their message directly to parents and others, it has produced results: more children are vaccinated. When they've had to use the daily newspaper as their messenger, however, the results have been less than satisfactory.

Media Survey

There are 111 daily newspapers in Canada: 99 English, 11 French and one bilingual. Seventy-four of these papers (68 English, 6 French) were informally surveyed recently by telephone to determine the awareness by the media of vaccination as a news issue; the papers' historical response to vaccination news; how they rank the importance of vaccination among Canadian health issues today; and what they believed would make vaccination a news issue of sufficient importance to warrant coverage.

Survey Findings

The findings of the survey, which was conducted at random over a 3-month period, are informal, yet instructive.

Nearly all respondents considered immunization news "soft news" that wasn't very important.

Few respondents could specifically recall receiving information about immunization from any source, although most expressed a belief that "something might have come in".

No respondents could recall specific Canadian immunization stories in the 3 months previous to the survey, although several mentioned that their paper had probably run news items about vaccination clinics because "... we run things like that as part of our community service...".

Most respondents did not believe that their paper considered immunization an important health issue, stating a belief that "... everyone has to get their children vaccinated anyway, right?"

The two items mentioned most often by respondents as being the kind of news that would be important to their paper were ones on either "bad vaccine", where many children had an adverse reaction to being immunized, or a major outbreak of a preventable childhood disease in their local community.

Survey Conclusion

Immunization is just one of hundreds of topics that editors must sift through daily in their quest to satisfy their reader's appetite for interesting, exciting, informative "news". The summary conclusion drawn from the survey from the perspective of its author, an experienced news person, however, was that daily newspapers do not find childhood immunization a front-rank issue, unless something goes wrong. Then, the bigger the crisis, the bigger a news story it becomes, and the longer it last in the paper. A significant breakthrough in vaccine technology, or some other major discovery, on the other hand, might also gain front-page attention, but it would be very short-lived attention.

Who Are the Media Allies?

There is no question that the media is an important tool for getting the public's attention — there is simply no other economically viable way in which to get the "vaccination is vital" message out before the millions who need to hear it.

Health Canada Santé Canada

Canada

The question that begs an answer is "which media" makes the best ally in this effort to get information out to parents and caregivers.

In the view of the author, it is not the daily media; it is the 1,067 community newspapers, and their companion 310 small ethnic papers that offer the best opportunity for message conveyance. While the bulk of these papers are published in English or French, the ethnic papers are available in some 40 different languages, affording news distributors an opportunity to reach nearly every person in Canada in their mother tongue.

Audience Comparison

It is sometimes mistakenly believed by health care providers and others charged with dispensing news about childhood immunization that daily newspapers have the big audiences, and can reach more people than can smaller papers. A closer examination of just two cities proves otherwise.

Montreal has three French and one English daily newspapers, with a combined circulation of 676,000. It also has 16 French and one bilingual weekly newspapers with a collective circulation of 1.1 million, and another 30 community papers published in 12 additional languages that have a circulation of 475,000. Thus, the total community newspaper circulation is nearly 1.5 million, or nearly three times that of the combined dailies.

Vancouver is in a similar situation. The city's two dailies have a combined circulation of 401,000. It's nine English and 17 other community papers, however, have a circulation of 608,000, more than 50% greater, and offer the added advantage of being published in nine additional languages.

Reaching The Media With Your Message

Daily newspaper editors, writers and reporters are difficult to reach, unless you're the sole source of major breaking news, and even then it can be a wearying process. Community papers, on the other hand, generally have much smaller staffs (usually under five people), and recognize that community members are often their greatest source of news and information. They also tend to be more concerned about what's happening at the local level, because that's where their readers and advertisers live. In general, they also tend to take health care issues very personally, because it often directly affects many people whom they know and care about on a firsthand basis.

How do you reach these community papers?

- by making yourself known to them through such simple acts as dropping by the office and introducing yourself;
- by offering to be a resource any time they're covering medical or health issues;
- by offering to write articles, columns or commentary on topics in which you have an interest;
- by keeping in regular contact with key editors and reporters, and offering them opportunities to participate at local clinics or health events;
- by passing on information you may receive from your resources (such as the CCDR) that you no longer have a need for, but which may be invaluable information to them;
- by passing on any materials you might receive from a pharmaceutical company that you don't have any use for, but which may be helpful to them;
- by acting as a catalyst or go-between, and putting editors and writers together with the people in the health care system they want to talk to, even when it doesn't serve your own vested interests; and
- by listening to them and their ideas about how to promote such health issues as immunization. They have a finger on the pulse of a community in a way that few physicians or health care providers can match, and can very often be a source of imaginative and inventive ways in which to get your message across. This can get your agenda on their "ownership list" quite quickly, which is the best possible position of all in which to be.

Conclusion

Big daily newspapers are, by their nature, about big news. In the case of immunization, that too often means big problems, big disease outbreaks, and big disasters. Prevention is not yet a major issue of interest to dailies, although hopefully it will be someday. Until then, physicians and other health care providers must accept the fact that cholera in Rwanda, the plague in India, or any other hot disease or disaster that's got the world's attention is always going to be bigger news than the need to have children immunized.

Smaller community papers don't look at it the same way. Their interest is local, and their vested interests are also local. They need the community to survive, and they know the community relies upon them for important news and information. Consequently, it makes sense to cultivate them, to be helpful, and to make them your allies in the continuing struggle to get the "vaccination is vital" message out to those Canadians who must hear it — the parents and caregivers of unimmunized or under-immunized children.

Source: *P Baker, Principal Counselor, Healthcare Communications Strategies, Toronto, Ontario.*

Editorial Comment: This paper was presented at the 3-day conference entitled "Immunization in the 90s: Challenges and Solutions", organized by the Laboratory Centre for Disease Control and held in Quebec City, 5-7 October, 1994.

RESURGENCE OF PERTUSSIS IN MONTÉRÉGIE, QUEBEC — 1990-1994

Introduction

Since 1990, Quebec has been experiencing a considerable increase in the number of reported cases of pertussis (whooping cough). A cumulative total of more than 1,300 cases was reported in 1990, 1992 and 1993. Such an increase has not occurred since the late 60s[1]. An increase in the number of cases reported in other Canadian provinces was also observed in 1990[2], and in the northeastern United States in 1993[3].

In response to this, an information campaign was carried out in Montérégie in November 1993 aimed at physicians, parents of newborns and children attending day care, or primary or secondary school. Letters were prepared describing the symptoms, diagnosis, treatment and prevention of pertussis, and parents were reminded of the importance of immunization. Physicians were told that, in an outbreak situation, intervention with cases and contacts was to be initiated as soon as a paroxysmal cough had lasted for > 7 days, and that they should not wait for culture confirmation since this played only a marginal role in making such a decision[4,5].

This report describes the epidemiology of pertussis in Montérégie between January 1990 and March 1994 in an attempt to determine the factors associated with the resurgence and the impact of the information campaign in the fall of 1993.

Methods

Montérégie is an area on the south shore of the St. Lawrence River near Montreal. Its population of approximately 1,280,000 people represents 18% of the total population of the province of Quebec. Pertussis reports are normally sent to the public health authorities by attending physicians or school nurses. Follow-up was made with the cases or the reporting individual to validate the diagnosis*. Following this, all those reports that met the clinical case definition of pertussis[6] were added to the provincial notifiable disease database. Cases not meeting the definition and those requiring hospitalization were reviewed in detail.

Results

Figure 1 shows the number of validated cases of pertussis and corresponding annual rates between 1980 and 1993. During this period, the percentage of cases for Montérégie ranged between 11% and 22% of the annual total reported for the province. In 1993, 4,340 cases were reported in the province, 790 (18.2%) of these in Montérégie, giving rates of 60 and 62 per 100,000 population, respectively. Figure 2 shows the distribution of cases by month between January 1990 and March 1994. Except for 1991, approximately 60% of the cases were reported in the last quarter of each year.

Quarterly data for the period January 1993 to March 1994 for suspect, validated, and laboratory-confirmed cases are given in Figure 3. The overall percentage of suspect cases in the first, second and third quarters of 1993 was 13%. This figure rose to 28% in the fourth quarter and to 43% in the first quarter of 1994. Two hundred and eighty-seven (81%) of the 353 suspect cases reported during this period were received between November 1993 and February 1994.

Figure 1
Pertussis in Montérégie, Quebec, 1980 to 1993

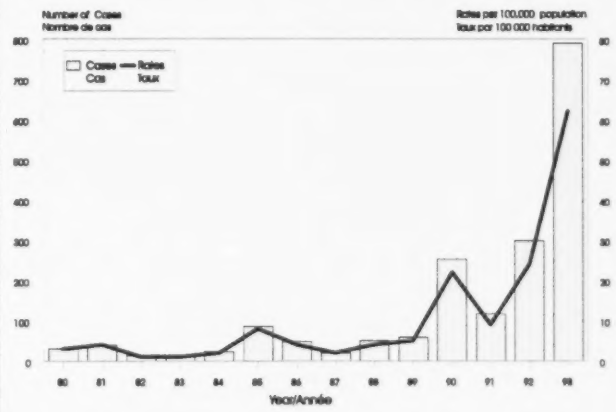
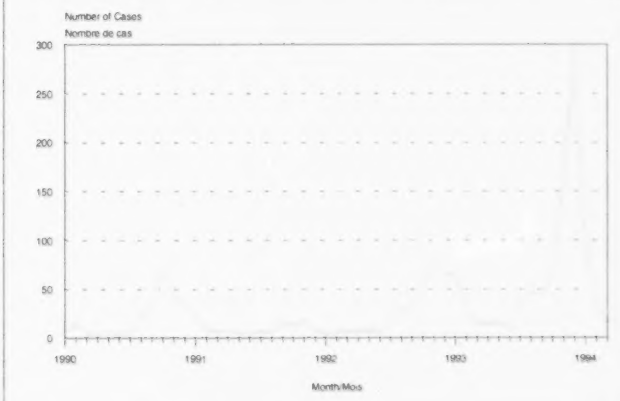


Figure 2
Monthly distribution of pertussis cases in Montérégie, January 1990 to March 1994



* A **validated** case is one that meets the clinical case definition or criteria and/or is laboratory-confirmed.
An **unvalidated** case is a suspect case.
A **confirmed** case is laboratory-confirmed by culture.

Of the validated reports for 1993, 81% met the clinical case definition, while the remaining 19% were confirmed by culture or by a direct link to a case that had been confirmed by culture. In December 1993, only 30 (10%) of the 294 validated cases were laboratory-confirmed; the proportion of these confirmed cases was significantly higher in children < 1 year of age: 42% vs 17% for other age groups ($p < 0.0001$).

Age distribution of cases reported from 1990 to 1993 is shown in Figure 4. Since 1990, the proportion of cases < 5 years of age has decreased. While accounting for 6% of the population of Montérégie, this age group accounted for 64% of cases in 1990, 70% in 1991, 56% in 1992, and 44% in 1993. As a result, the proportion of cases in other age groups increased, with the most significant increase occurring in those ≥ 20 years. From 1% in 1990, this group represented 11% of confirmed reports in 1993. The rates decreased with increasing age. In 1993, the rates per 100,000 for the age groups 0 to 11 months, 12 to 59 months, 5 to 9 years, 10 to 19 years, and ≥ 20 years, the rates were 414, 443, 309, 61, and 10, respectively.

Fifty-five percent of all the cases were female. The percentage increased in those ≥ 10 years: 67% vs 53% for those < 10 ($p < 0.0005$).

As expected, the proportion of cases requiring hospitalization decreased with age. In 1993, 32 (4.1%) cases had to be admitted to hospital. Sixteen (50%) of the 32 infants < 6 months were hospitalized and 11 of these were < 3 months old. An additional seven cases (21%) were in a group of 33 infants aged 6 to 11 months, 6 (2%) in the 12 to 59-month group, and 3 (1%) in those aged ≥ 5 years. The conditions associated with the latter cases were asthma, cystic fibrosis, and pregnancy. No pertussis-related deaths have occurred in Montérégie since January 1990.

In 1993, the immunization status was known for 631 (80%) cases of all ages, but this information was available for only 28% of those ≥ 20 years. Among these 631 cases, 546 (87%) were appropriately immunized for their age, while 54 (9%) were incompletely immunized and 31 (5%) had never been immunized. In the 0 to 5 months and 6 to 11 months age groups, 7% and 31% of the cases were not completely immunized, and 40% and 7%, respectively, were not immunized.

Discussion

Analysis of the surveillance data indicates a recent increase in the number of cases of pertussis in Montérégie: a remarkedly higher number in 1993 than in the previous five years. It is doubtful that this resurgence reflects a significant change in surveillance methods; it is unlikely that physicians or school nurses would have changed reporting patterns, except perhaps after the information campaign in November 1993. No other reportable disease in recent years has followed a similar trend.

The case definitions for clinical and laboratory-confirmed cases[6] have been applied uniformly by all those involved in public health in Montérégie since January 1991, and all reports are systematically verified with the case or the reporting person. The

Figure 3
Quarterly distribution of reported cases in Montérégie, January 1993 to March 1994

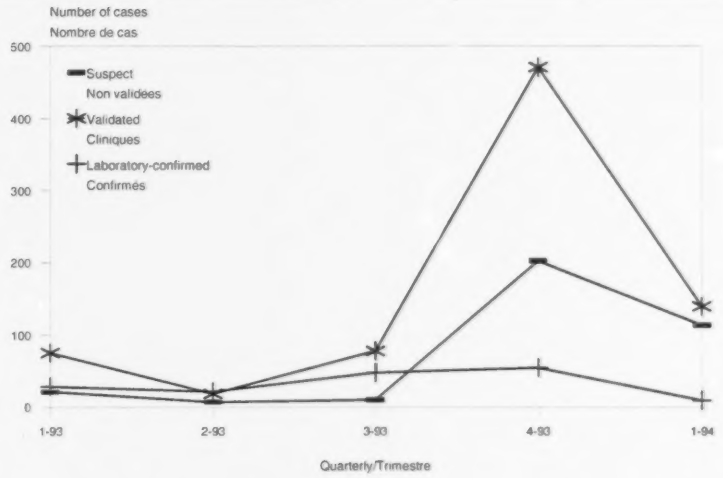
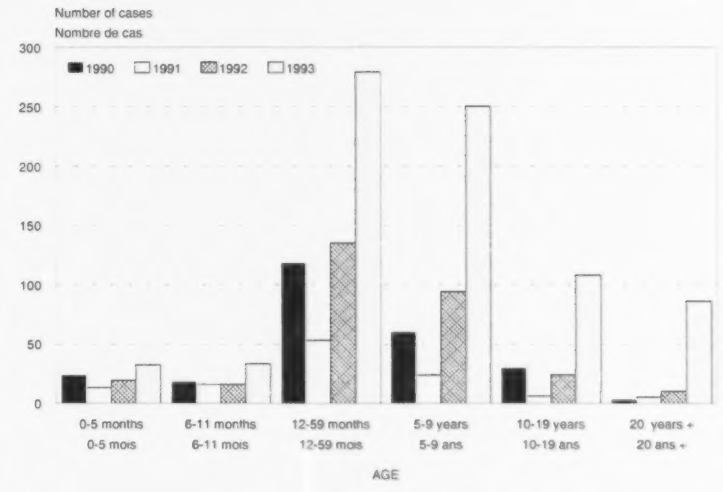


Figure 4
Pertussis case distribution by age, Montérégie, 1990 to 1993



same case definitions are recommended for surveillance across Canada[4]. Patriarca et al[7] have demonstrated that the criterion of cough lasting 14 days or longer, which is the basis of the clinical case definition, is both sensitive and specific.

The November 1993 information campaign is probably responsible for the increase in the proportion of suspect cases reported in December 1993 and the first quarter of 1994. In follow-up, these were mainly cases where a cough had lasted for < 14 days, which would suggest that the information campaign had attained one of its objectives: early investigation of suspect cases. It must be realized, however, that investigation of all these reports represents a significant increase in work load. Of the 445 reports received in December 1993, 151 (34%) did not meet the clinical case definition. It is impossible to determine the extent to which these interventions contributed to the decrease in cases noted in the first quarter of 1994, since it corresponds to the cycle of the disease in this region.

The decreased percentage of confirmed cases starting in the fourth quarter of 1993 reflects the information given to physicians on the limited value of waiting for culture confirmation in an outbreak situation[4,5].

The more rapid increase in cases in those ≥ 10 years of age may suggest a reporting bias or a lowered immunity in that age group. A similar increase was observed in the United States by Farizo et al[8], who also reported a preponderance of females ≥ 15 years, which he attributed to the fact that women are more exposed to the disease through contact with infants and young children. It is also possible that women are more likely to consult a physician when they have symptoms.

Pertussis remains a serious illness in infants[9] as can be seen by the proportion of those 0 to 11 months of age who were hospitalized. The three cases > 5 years of age who were hospitalized had some complicating condition. The higher percentage of hospitalizations observed by Farizo et al[8] is probably related to an under-representation of milder forms of pertussis in their sample.

Immunization data are incomplete, which greatly restricts interpretation, particularly for the group > 20 years of age. Infants < 1 year old are, of course, not as well protected as others.

In conclusion, since 1990 there has been an increase in the number of cases of pertussis in Montérégie and in the rest of the province. The reason for this increase is unclear, but the data presented confirm that the disease affected all age groups and that infants are at greatest risk for serious complications. Priority must be given to adequate immunization and to early intervention with cases and contacts in situations where young children will benefit from such intervention[4,5].

Acknowledgements

We wish to thank Dr L. Perron, A.M. Clouâtre, L. Fugère, L. Guay-Wiedrick and C. LaSalle for their collaboration in this study, together with all those involved in validating reported cases.

References

1. Direction de la prévention et protection de la santé publique. *Maladies infectieuses: rapport annuel 1986*. Québec: Ministère de la Santé et des Services Sociaux, 1987.
2. LCDC. *Notifiable diseases annual summary - 1991*. Ottawa: Health and Welfare Canada, 1991.
3. CDC. *Resurgence of pertussis - United States, 1993*. MMWR 1993;42:952-3,959-60.
4. LCDC. *Pertussis consensus conference*. CCDR 1993;19:124-35.
5. Direction générale de la santé publique. *Prévenir et enrayer la coqueluche - situation et orientations*. Québec: Ministère de la Santé et des Services Sociaux, 1993.
6. Direction de la santé publique. *Surveillance des maladies infectieuses à déclaration obligatoire au Québec - définitions nosologiques*. Québec: Ministère de la Santé et des Services Sociaux, 1991.
7. Patriarca PA, Biellik RJ, Sanden G et al. *Sensitivity and specificity of clinical case definitions for pertussis*. Am J Public Health 1988;78:833-36.
8. Farizo KM, Cochi SL, Zell ER et al. *Epidemiological features of pertussis in the United States, 1980-1989*. Clin Infect Dis 1992;14:708-19.
9. Gold R, Déry P, Halperin S et al. *Pertussis in children hospitalized in five Canadian pediatric tertiary care centres*. CCDR 1994;20:31-4.

Source: *F Milord, MD, Direction régionale de la santé publique de la Montérégie, Greenfield Park, Québec.*

PERTUSSIS IN QUEBEC: ONGOING EPIDEMIC SINCE THE LATE 1980s

The incidence of pertussis (whooping cough), a reportable disease, declined constantly in Quebec from 1955 until the late 1980s (Figure 1). In 1989, the province implemented a centralized, computerized system for all reportable diseases (MADO). Since 1990, the number of reported cases of pertussis has risen in Quebec, reaching epidemic proportions that have persisted each year since then. The introduction of a new reporting system may have resulted in a bias towards surveillance causing an increase in incidence whereas, in reality, there appears to be no change in the reporting of pattern. To determine if there has been a true increase, we examined hospitalization trends for pertussis using the Med-Echo hospitalization records system, which was introduced in 1982.

Method

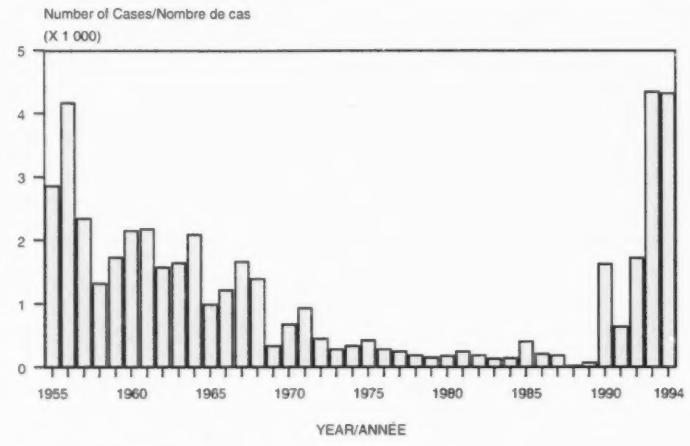
The data for all patients hospitalized with pertussis as the primary or secondary diagnosis were analyzed. The analysis was carried out for all those years where there was complete relevant information, i.e., from 1983 to 1993.

Results

From 1 January, 1983 to 31 December, 1993, 3,544 persons (mean: 322) were hospitalized with a diagnosis of pertussis. Of that number, 84% (2,987) had pertussis listed as the primary diagnosis. Infants < 3 months of age and those 3 to 5 months old represented 23% and 24%, respectively, of the hospitalizations. Infants from 6 to 11 months constituted only 10% of the hospitalizations. These percentages remained generally stable over

the entire study period. However, the annual number of hospitalizations remained relatively stable from 1983 to 1987, began to increase in 1988, from an average of 228 cases prior to 1988 to an average of 400 thereafter (Figure 2). Moreover, the number of cases in infants in each of the age groups < 1 year remained stable between 1983 and 1987, but began to rise in 1988 with the average annual number increasing from 107 to 192 for those < 6 months of age, and from 41 to 61 for those 6 to 11 months old.

Figure 1
Cases of pertussis reported in Quebec from 1955 to 1994



1988: Missing data/ Données manquantes
1994: Provisional data/Données provisoires

Discussion

Hospital records of cases have certain limitations, making their use somewhat restricted. The key limitation involves the sensitivity and specificity of the diagnosis. In pertussis, diagnosis is more specific and sensitive in children < 1 year of age than it is in older children because of the increased severity of the disease. Since infants < 1 year of age constitute 65% of admissions for the disease, they can be considered to provide a valid indicator of the trend associated with it. Moreover, during the study period there were no innovations concerning diagnosis that could have contributed to the increase in incidence.

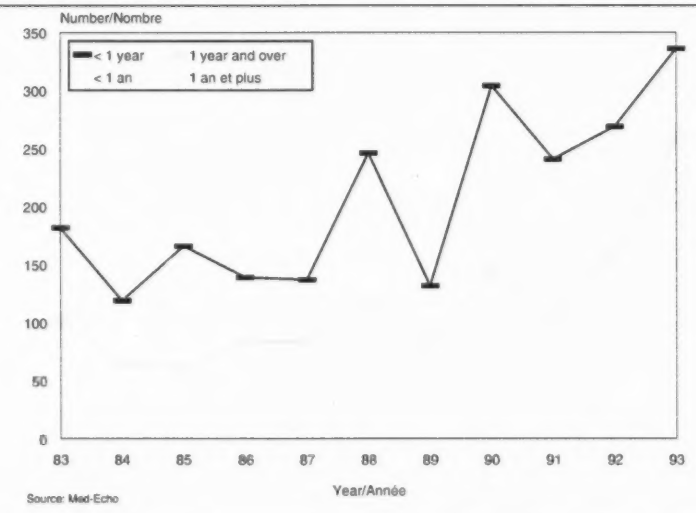
The Med-Echo data confirm that the reported increase in the incidence of pertussis is true. However, the number of hospitalizations seems much lower than the number of cases in the MADO database. This difference is probably the combined result of two effects. Firstly, general surveillance of pertussis has apparently increased with the introduction of the MADO reporting system, and this will not be reflected in the hospitalization data. Secondly, it is possible that the epidemiology of the disease has changed and is now affecting more persons > 1 year of age. This hypothesis is supported by the change noted in the percentage of cases < 1 year of age in the MADO database. This percentage has been decreasing each year, from 16% in 1990 to < 10% in 1994.

The increase of almost 80% in the average annual number of hospitalizations of young infants < 6 months of age is of particular concern. These children receive no immunization before the age of 2 months, and the mortality associated with the age group is reason for concern. This concern was justified by the first pertussis- associated fatality in the spring of 1994 (an unimmunized 3-month-old), and particularly by the incidence of pertussis, which continued to increase in 1994 (Figure 1).

Epidemics of pertussis occur every 3 to 5 years. One of the disturbing aspects of the current trend has been the persistent increase from one year to the next since 1990 (Figure 1). It appears that the incidence of the disease has abruptly changed from low endemic to very high endemic or epidemic. Other Canadian provinces[1] and the United States[2] have also observed increases in pertussis incidence. The reason(s) for this has not been clarified, but preliminary data seem to indicate that the efficacy of the vaccine is probably lower than the 80% to 85% generally expected[3]. The cause of this low efficacy is unknown at this time, but several factors are probably involved: changing in the vaccine type from a liquid to an adsorbed form, changes in the bacterium, and disruption of the cold chain.

In recent years pertussis has again become a major public health problem. It is important that public health authorities are aware of

Figure 2
Number of pertussis cases hospitalized, by age, Quebec, 1983-1993



Source: Med-Echo

this now to quickly allocate resources to determine the cause and find lasting solutions.

References

1. LCDC. *Pertussis consensus conference*. CCDR 1993;19:124-35.
2. CDC. *Resurgence of pertussis - United States, 1993*. MMWR 1993;42:952-53,959-60.
3. De Serres G, Boulianne N, Duval B et al. *Résultats préliminaires de l'étude sur l'efficacité contre la coqueluche dans les garderies*. Presented at the provincial symposium on infectious diseases, Montreal, April 1994.

Source : *G De Serres, MD, N Boulianne, MSc, M Douville Fradet, MD, B Duval, MD, Centre de santé publique de Québec, Québec.*

Editorial Comment: Between 1955 and 1987, the morbidity and mortality associated with pertussis in Canada declined remarkably. However, this trend reversed in 1988. Outbreaks of the disease keep occurring in many parts of Canada. The highest number of cases reported in this recent resurgence was in 1990: 8,030 with a rate of 30.2 per 100,000 population. The provisional total for 1994 indicates that almost 8,000 cases were again reported.

No single factor can be found to explain the reasons for the current resurgence. Most cases, in fact, involve children who have a history of vaccination against pertussis according to the current recommentations, others have received less than the recommended doses, while still others have none at all. The accumulation of susceptible populations resulting from a combination of factors is responsible for these outbreaks. Estimates of protection afforded by the currently available vaccine range from 65% to 80%.

In order to address some of the issues concerning outbreak control, the National Advisory Committee on Immunization, the Advisory Committee on Epidemiology and the Canadian Paediatric Society issued a joint statement on management of persons exposed to pertussis and pertussis outbreak control in 1990[1]. In addition, in 1993, a national pertussis consensus conference, sponsored by Health Canada, was held to develop national goals for the control of the disease, to discuss the many problem areas regarding it, and to determine the best strategy to achieve the goals[2]. Epidemiologic studies currently are in progress to identify risk factors.

References

1. National Advisory Committee on Immunization, Advisory Committee on Epidemiology and the Canadian Paediatric Society. *Statement on management of persons exposed to pertussis and pertussis outbreak control*. CDWR 1990;16:127-30.
2. LCDC. *Pertussis consensus conference*. CCDR 1993;19:124-135.

Announcements

INTERNATIONAL TRAVEL AND HEALTH
Vaccination Requirements and Health Advice

The 1995 edition of ***International Travel and Health*** has just appeared in English and French. This booklet is addressed to national health administrations and to the practising physicians, tourist agencies, shipping companies, airline operators, and other bodies who are called upon to give health advice to travellers.

In addition to summarizing the vaccination requirements of individual countries, the booklet indicates the main areas where malaria transmission occurs and where *Plasmodium falciparum* is resistant to drugs. The recommended chemoprophylactic regimen is also given for each country with malarious areas.

Other chapters cover certain health hazards to which the traveller may be exposed and indicate the areas in which these hazards are most likely to occur. The booklet also recommends a number of precautions that the wise traveller should take when visiting unfamiliar places.

This booklet can be obtained from the **Publications Department, Canadian Public Health Association, 400-1565 Carling Avenue, Ottawa, Ontario, K1Z 8R1, (telephone: (613) 725-3769)**. Price per copy is $18.67 (including postage, handling and GST).

ANNUAL SUMMER PROGRAM IN EPIDEMIOLOGY AND BIOSTATISTICS

The 10th annual summer program in epidemiology and biostatistics will be held at the Department of Epidemiology and Biostatistics, Faculty of Medicine, McGill University, Montreal, from 8 May to 30 June, 1995.

For further information, contact the **Coordinator, Annual Summer Program, McGill University, 1020 Pine Avenue, W. Room 38-BF, Montreal, Quebec, H3A 1A2 (tel. [514] 398-3973, fax [514] 398-4503)**.

The Canada Communicable Disease Report (CCDR) presents current information on infectious and other diseases for surveillance purposes and is available through subscription. Many of the articles contain preliminary information and further confirmation may be obtained from the sources quoted. Health Canada does not assume responsibility for accuracy or authenticity. Contributions are welcome (in the official language of your choice) from anyone working in the health field and will not preclude publication elsewhere.

Scientific Advisors:	Dr. John Spika	(613) 957-4243
	Dr. Fraser Ashton	(613) 957-1329
Editor:	Eleanor Paulson	(613) 957-1788
Assistant Editor:	Nicole Beaudoin	(613) 957-0841
Desktop Publishing:	Joanne Regnier	

Submissions to the CCDR should be sent to the Editor at the following address : Laboratory Centre for Disease Control, Tunney's Pasture, Ottawa, Ontario K1A 0L2.

To subscribe to this publication, please contact :
Canada Communication Group - Publishing — Tel. No. :(819) 956-4802
Ottawa, Canada K1A 0S9 — FAX : (819) 994-1498

Price per year: $75.00 +G.S.T. - in Canada; $97.50 (U.S.) - outside Canada.

© Minister of National Health and Welfare 1995